

U.S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE
CALIFORNIA FOREST AND RANGE EXPERIMENT STATION
Division of Forest Insect Research

FOREST INSECT CONDITIONS
SAN BERNARDINO NATIONAL FOREST
APPRAISAL SURVEY
September 1958

During the period of September 15 through 18, 1958, R.C. Hall from the Station and J.L. Averell of the Region made an appraisal of the forest insect situation on the San Bernardino National Forest. Areas of special interest included the Big Bear District, the Santa Rosa Mountain area of the San Jacinto District, and the Wrightwood area of the Cajon District. Both the San Bernardino National Forest and the State Division of Forestry had specifically requested an appraisal of these areas. Other people participating in this appraisal included Bob Blanford, Forest Technician with the State Division of Forestry, Riverside; Tom Bryan, Associate Ranger, San Bernardino District, State Division of Forestry; Frank L. Hagerty, Jr., Forester, Bureau of Indian Affairs, Riverside; M.J. Horn, Don R. Bauer and John Pierce from the Supervisor's office; Ranger Earl E. Nichols, Big Bear District; Ranger John C. Gilman, San Jacinto District; Ranger Lynn R. Biddison, Cajon District - all of the San Bernardino National Forest.

The conditions found and an analysis of the insect situation will be discussed by Ranger Districts. The appraisal was based on a rather thorough coverage of each area by car and on foot with an inspection of abundance of population of each insect species found.

Big Bear District

The principal tree species on the District is Jeffrey pine, although in some local areas mixed conifers are found. The principal forest insect pests on this District are the Jeffrey pine beetle, Dendroctonus jeffreyi Hopk.; the California flatheaded borer, Melanophila californica Van D. in Jeffrey pine; and the fir engraver, Scolytus ventralis Lec. in white fir. Losses for the 1958 season are largely confined to the Jeffrey pine stands which contain numerous high-risk trees. They are due to the Jeffrey pine beetle, which is currently on the increase. Populations of this bark beetle were found to be heavy and very aggressive in all infested trees examined. Broods were advanced in some trees to the callow adult stage. The California flatheaded borer, in 1957 the cause of heavy group-loss in some of the fringe areas, is considerably less active, and damage much reduced by comparison with last season.

The ownership pattern in the area is about 70 percent U.S. Forest Service and 30 percent private. Of the private holdings, the Big Bear Water Company owns about 90 percent.

There has been some attempt at insect control on the Big Bear District during the last two years. The District completed a sanitation-salvage operation in the Grout Creek area last year, and sanitation-salvage is now underway in the Holcomb Creek area. Ultimately, all of the Forest Service ownership is scheduled to be treated with sanitation-salvage. In addition, about 400,000 board-feet of infested trees on Forest Service lands were salvaged this year. The Big Bear Mutual Water Company is also salvaging some infested trees. Very little formal insect control is being undertaken by the lot owners, but on the whole their failure to do so is a rather small portion of the whole problem.

Discussion

The history of insect damage in the District for the past 20 years has been one of fluctuating but relatively high losses. During this period rather serious stand depletion has occurred. We would expect continuing high losses in the area if no control work is undertaken.

Control measures which can be used include direct methods such as salvage of infested trees, cut-peel-and burn, or cut and spray with ethylene dibromide. An indirect method of control that can be used is sanitation-salvage. Direct methods are temporary and need to be done year after year, while sanitation-salvage has the advantage of being more long-lasting. Considerable progress has already been made on this District in indirect control, as has already been noted. Within a few years all of the federal ownerships will have been treated by sanitation-salvage. This treatment has not been attempted on private land to date. Its advantages should be brought to the attention of the major private landowners, including the Big Bear Water Company.

There still remains the problem of control on the small lot ownership. This is a minor segment of the whole problem, and one where an educational program to acquaint the small owner with the possibility of salvaging their infested trees or using other direct methods of control might be well worthwhile.

San Jacinto District

An inspection was made of the San Jacinto zone of infestation and the Santa Rosa Mountain. The principal insects in the area are the western pine beetle, Dendroctonus brevicomis Lec. in Coulter pine; the mountain pine beetle, D. monticolae Hopk. chiefly in sugar pine; the California flatheaded borer in Jeffrey pine; pine engravers, Ips sp. in all three pine species, and the fir engraver in white fir. In inspecting the northern portion of the zone, numerous groups of recently faded Coulter pines were observed. This proved to be the work of the western pine beetle which apparently had built up in large numbers in trees blown down by winds in the late winter. The broods in these trees were well developed and aggressive. The balance of the zone, where maintenance control has been underway for some time, looked very free from insect attack.

An inspection of the Santa Rosa Mountain area indicated that the principal insect causing loss was the California flatheaded borer in Jeffrey pine, and the fir engraver in white fir. The Santa Rosa Mountain area is a remote isolated patch of timber of generally poor site, ranging in elevation from about 6,500 to 8,000 feet. The principal timber species is Jeffrey pine at the lower elevations, with some mixed conifers on the higher northern exposures. An epidemic of the California flatheaded borer was observed from the air by Hall and Pierce in late April, and a portion ground-checked a few days later. Impassable roads prevented surveying the whole area from the ground then, but it was checked later on May 27 by Pierce, Ruppelt, and Blanford.

In his memo to the Regional Forester dated May 29, 1958, Pierce estimated that about 160 Jeffrey pines, dying from California flatheaded borer attacks, were present on approximately 560 acres. There was very little evidence of additional 1958 losses when the area was inspected in September. The flatheaded borer epidemic in this area seems to be slowing down, although it is too early to confirm this supposition.

Toro Peak, which is outside the San Bernardino Forest boundary, and on the Santa Rosa Indian Reservation was also examined, but very little current loss was found in the area.

Discussion

Consideration should be given to controlling the western pine beetle epidemic in Coulter pine in the north Idyllwild area soon, before the summer brood emerges. If prompt action is not taken, the infestation can be expected to increase. This point was discussed with the local ranger and he is aware of the need for fast action.

The decline in the number of currently infested trees observed in the Santa Rosa-Toro Peak area, indicates that the flatheaded borer epidemic is subsiding. Further heavy loss in 1958 is not expected. We do not believe there is enough potential population in the area to justify consideration of a direct control project this winter. Much of the area is low site with an abundance of high risk trees, and it is expected that heavy losses will reoccur from time to time if no action is taken. Sanitation-salvage in this area may have some possibilities for forestalling future epidemics in the area.

The Cajon District

An inspection of the Wrightwood area on the Cajon District showed that the California flatheaded borer is continuing to kill a relatively large number of Jeffrey pine. Practically all of the insect damage is restricted to private land, largely in small lot ownerships. The 1958-killed trees examined contained aggressive populations of mature and pre-pupa larvae. No estimate of the number of 1958 trees was obtained, because only a small percentage have started to fade. There was considerable evidence

of the work of the Oregon pine engraver, Ips oregoni (Eichh.), in trees killed in 1957, but very little evidence of current attacks in the 1958 trees.

Losses in the Wrightwood area have been heavy for a number of years. Part of the problem is associated with land subdivisions and woodcutting. In land subdivisions, trees are often pushed over and the roots of many are cut. These activities encourage the buildup of the insects. In woodcutting, the common practice is to stack wood against trees. If such wood is green, this sets up a definite attraction to Ips as well as furnishing an excellent breeding source for Ips. The problem is restricted to about 1,500 timbered acres around Wrightwood.

Discussion

In view of the past history of high Jeffrey pine loss, and the disturbances that are conducive to insect outbreaks in the Wrightwood area, we would expect insect damage to continue at a high level unless some measure of control is undertaken. The control possibilities in the Wrightwood area are somewhat limited. Since the size of the average infested tree is small, there is little chance to salvage infested trees for saw logs and very little hope of reducing the quantity of material in which insects breed by sanitation-salvage. Other control possibilities are cut-peel-burn, or cut and spray infested trees. In order to be effective, control should be carried on over the entire area rather than on scattered ownerships. If a zone of infestation is set up, it should include all the relatively flat timbered area around Wrightwood from about Holiday Hill on the west to the fringe of timber east of Wrightwood village.

In addition to the control work, it is suggested that an educational campaign be undertaken to acquaint the local people with some of the hazards involved in the improper handling of stove wood and uprooted trees in subdivision work. Those control possibilities were discussed in the field after the examination with Blanford and Bryan of the California Division of Forestry, Horn and Pierce from the Supervisor's office, Biddison from the local Ranger District, and Averell from the Regional office.

Berkeley, California
October 8, 1958

Ralph C. Hall,
Entomologist